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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/505,334

08/23/2004

Shuichi Ichikawa

120868

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25944 7590 05/29/2009

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

05/29/2009

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHUICHI ICHIKAWA, AIKO OTSUKA, MOTOMICHI ITOU,
TAKUMA MAKINO

Appeal 2009-002196
Application 10/505,334
Technology Center 2800

Decided:¹ May 28, 2009

Before PETER F. KRATZ, JEFFREY T. SMITH, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from a final rejection of

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

claims 1-6, 9, 10, and 12-36.² Claims 7 and 8 have been objected to as dependent upon a rejected base claim. (App. Br. 3). We have jurisdiction under 35 U.S.C. § 6.

Appellants' invention relates to a method for measurement of thermal conductivity of a honeycomb structure. (Spec. 1). Claim 18 is illustrative:

18. A method for measurement of thermal conductivity of a honeycomb structure, the method comprising the steps of:

contacting two ends of the honeycomb structure with contact members;

covering exposed sides of the honeycomb structure with heat-insulating material;

keeping the whole honeycomb structure in a steady temperature state with keeping two ends of the honeycomb structure at given different temperatures; and

measuring a thermal conductivity of the honeycomb structure in the steady state, wherein:

the contact members are kept at given different temperatures and are contacted with the two ends of the honeycomb structure to keep the two ends of the honeycomb structure at given different temperatures;

the two ends of the honeycomb structure and the contact members are contacted with each other via high-thermal-conductivity members; and

each high-thermal-conductivity member is made of a film formed by applying a paste containing a substance of high-thermal conductivity, on a contact face of the honeycomb structure and/or the contact member.

Appellants appeal the Examiner's rejections as set forth below:

² An oral hearing was held for this appeal on May 13 2009.

Claims 13, 16-18, 22 and 24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kishimoto, U.S. Patent No. 5,693,685, issued December 2, 1997, combined with Amer, U.S. Patent No. 6,331,075 B1, issued December 18, 2001.

Claim 25 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Kishimoto, Amer, and Kirino, U.S. Patent No. 6,730,421 B1, issued May 4, 2004.

The dispositive issue before us is whether the Examiner has established that the combination of Kishimoto and Amer describes a honeycomb structure, or a method of testing the thermal conductivity of a honeycomb structure, as recited in claim 18. We answer this question in the negative. Therefore, WE REVERSE.³

The Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). In order to establish a *prima facie* case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988)). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988

³ We select independent claim 18 as representative of the rejected subject matter.

(Fed. Cir. 2006) (quoted with approval in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

According to the Examiner, Kishimoto teaches a honeycomb structure/device as shown in Fig. 1. The Examiner asserts that Kishimoto teaches that sides of the honeycomb structure are covered with a heat-insulating material. The Examiner asserts that Kishimoto teaches that the structure's thermal conductivity was (needed to be) determined (col. 13, lines 9-15). The Examiner recognizes that Kishimoto does not teach the particular method for determining thermal conductivity. (Ans. 4). The Examiner relies upon Amer for describing a method for measuring the thermal conductivity of a structure. The Examiner asserts that Amer teaches the test structure is connected to two heat conductive slabs having thermocouples. The Examiner asserts that in the steady state mode, the two slabs are, inherently, kept at given different temperatures. (Ans. 4). The Examiner concludes that it would have been obvious to a person of ordinary skill in the art to utilize the method taught by Amer, to measure a thermal conductivity of a structure of Kishimoto, so as to provide the honeycomb structure with a conduction path through the honeycomb structure, as very well known in the art, and thus, obtain data on how the structure conducts heat. (Ans. 4-5).

Appellants contend that the Examiner has not established a prima facie case of obviousness. Appellants contend that no combination of Amer and Kishimoto would result in a combination having several of the features positively recited in claim 18. Appellants also contend that Amer and Kishimoto do not describe a honeycomb structure having the exposed sides covered with heat-insulating material. Appellants further contend

that Amer and Kishimoto do not describe the claimed method of measuring the thermal conductivity of a honeycomb structure including keeping a whole honeycomb structure in a steady temperature state. (Br. 8-12).

We agree with Appellants that Amer is directed to a method of measuring the conductivity of thin solid films, having a thickness between 50 and 150 μm , and not a honeycomb structure as required by the claimed invention. (Br. 11; Amer, col. 2, ll. 32-45). Appellants assert that the honeycomb structures of the claimed invention and as known by persons of ordinary skill in the art have through-holes, or perforations, defined by partition walls. (Reply Br. 3-4). The Examiner cites to the Webster's dictionary in an attempt to equate the porous structure of Kishimoto to the honeycomb structure of the claimed invention. (Ans. 7). This description does not indicate that the porous structure of Kishimoto has through-holes or perforation as required by the claimed invention.

The Examiner has not directed us to specific portions of Kishimoto that describe a honeycomb structure as required by the claimed invention or that the structure described in Kishimoto has a thickness between 50 and 150 μm which is required for the process of Amer. Moreover, the Examiner has not directed us to evidence that Amer is suitable for measuring the thermal conductivity of a honeycomb structure as required by claim 18.

For the foregoing reasons and those presented in Appellants' Briefs, the rejection of claims 1-6, 9, 10, and 12-36 under 35 U.S.C. § 103(a) is reversed.

Appeal 2009-002196
Application 10/505,334

ORDER

The Examiner's decision rejecting claims 1-6, 9, 10, and 12-36 is reversed.

REVERSED

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